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Two New Genera of Phytoseiid Mites with a Note on *Proprioseius meridionalis* Chant (Acarina: Phytoseiidae)

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In general, phytoseiids are fast moving, wide ranging mites and are not found in colonies. The habits of the two species described below differ in these respects—they are rather sluggish and are gregarious. One species lives in close colonies within flowers, the other in loose colonies between flower heads. I have been unable to determine what the mites feed on, but believe *A. hebetis* may feed on pollen.

In the following descriptions all measurements are in microns.

ANTHOSEIUS, n. gen.

Phytoseiids with short, setiform, smooth setae, except last lateral which is expanded at tip; with five pairs of anterolateral setae; with dorsal shield postad rounding over sides and rear

of hysterosoma, and with the peritremata very coarse. Larva with a pair of short setae enlarged at tips on posterior dorsal shield and without a posterior pair of long whip-like setae; protonymph with an anterior and a posterior dorsal shield; legs of both proto- and deutonymph without macrosetae, and legs of all stages very short and stout.

Type of genus: *Anthoseius hebetis*, n. sp.

Anthoseius most closely resembles *Typhlodromus s. str.*, but differs from that genus chiefly in having peritremata very coarse, the last lateral seta expanded at tip, and the larva without a posterior pair of long whip-like setae.

Anthoseius hebetis, n. sp.

FEMALE: Dorsal shield convex (more strongly postad), 325–344 long, 180–201 wide (three specimens), widest at about LS, indistinctly imbricate, rather strongly sclerotized, light brown in color and with ten lateral (five anterolateral), two median, and six dorsal pairs of setae. L1–L10 11 to 19 long, L3 the shortest, L10 the longest; most of the setae about 15 long, all setae distinctly shorter than distance between their bases; L10 simple with tip enlarged; M1 11, M2 15 long (simple); D1–D5 11–14 long; S1 15, S2 13 long. Sternal shield with two pairs of setae; genital shield 78 wide near posterior margin; ventrianal shield with sides concave, 101 long, 69 wide near anterior margin and 77 wide at a level slightly anterior of anus, with three pairs of preanal setae and a pair of small pores all normally arranged (the shape of the ventrianal shield varies considerably, rarely approaching bilateral symmetry); two pairs of metapodal shields, the primary 34 long, about 5 wide, the accessory 16 long, about 2 wide; four pairs of interscutal setae including VL1 which is 18 long and six pairs of platelets bordering the ventrianal shield. Peritremata extending forward to about level of L1 and very coarse (about 7 wide), the shield extending back around coxa IV as a large blunt hook. Movable digit with a small subapical tooth, some specimens with a minute tooth proximal of subapical tooth; fixed digit with a

blunt subapical tooth and a smaller tooth between it and *pilus dentilis*. Legs heavy, short, and without macrosetae; tarsus IV, excluding pretarsus, 55 long.

MALE: Resembles female; dorsal shield 250 long, 135 wide (three specimens); ventrianal shield with three to five (usually five) pairs of preanal setae and three pairs of faint pores. Spermatophore bearer about 30 long, slightly curved, with a slight twist, and tapering gradually towards tip, tip slightly flared.

LARVA: Idiosoma 195 long. Anterior dorsal shield with nine pairs of setae (4 laterals, 1 median and 4 dorsals) normally arranged, the four laterals and D1 of about the same lengths (L2 10 long) and longer than the others (D2 5 long). Posterior dorsal shield with one pair of setae enlarged at tips and about 30 long. One pair of preanal setae and a pair of pores about $2\frac{1}{2}$ times the length of the preanals anterolateral of them; no lateroventral or posteroventral setae; anal shield with a pair of minute pores anterolateral of paraanals. Movable digit without teeth; fixed digit with small knob near base of terminal hook. Legs without macrosetae.

PROTONYMPH: Idiosoma 226 long. Anterior dorsal shield with nine pairs of setae arranged as for larva and with a tenth pair of setae just off the shield at its posterolateral angles; S1 off shield between the third and fourth lateral setae. Two pairs of setae (apparently L7 and D5) on the interscutal membrane between the anterior and posterior dorsal shields, S2 slightly anterolateral of L7. Five pairs of setae on the posterior dorsal shield (L8, L9, L10, D6, and M2) M2 at side between L8 and L9; L8 and L10 with tips enlarged. Peritremata coarse, extending forward to a point about even with fourth lateral seta. Three pairs of intercoxal setae. Four pairs of setae and sometimes two pairs of shieldlets bordering anal shield. Anal shield with a pair of pores as for larva. Movable digit with a trace of a tooth, fixed digit with teeth as for adult but not as developed. Legs without macrosetae.

DEUTONYMPH: Dorsal shield 285 long with setae as for adult, L8 and L10 with tips enlarged; L10 about 21 long. Peritremata coarse, extending forward to a point about even with L2.

Five pairs of intercoxal setae. Seven pairs of setae and four pairs of shieldlets surrounding anal shield. Legs without macrosetae.

Holotype: Female, Key Largo, FLORIDA, December 6, 1958 (D. De Leon), from within the flower of *Heliotropium parviflorum*. *Paratypes*: Four males, four females, same data as for holotype.

This mite colonizes a single flower, all stages occurring within the throat. The throat of the flower is about a millimeter in diameter and two millimeters long. I have taken 35 mites from four flowers. When collected the mites were covered with pollen. This might be partly caused by disturbance when collecting them, but as the flowers appeared to be uninjured and no other arthropods were observed within or on the outside of the flowers, it seems quite possible that these mites were feeding on the pollen.

PHYLLODROMUS, n. gen.

Phytoseiids with dorsal shield smooth to faintly imbricate; with most of the lateral setae and M2 gradually enlarged towards the tips and with the tips abruptly constricted; with all setae simple, and with six pairs of dorsal setae. Peritremata very wide. Larva without a pair of long whip-like setae; protonymph with two dorsal shields, and legs of all stages without macrosetae.

Type of genus: *Phyllodromus leiodis*, n. sp.

Phyllodromus resembles *Asperoseius* Chant and *Proprioeseius* Chant in having club-shaped lateral setae, but the club-shaped lateral setae of those two genera are strongly serrate, moreover they have five pairs of dorsal setae.

Phyllodromus leiodis, n. sp.

FEMALE: Dorsal shield smooth to faintly imbricate, 335–362 long, 162–193 wide (seven specimens), with nine lateral (four anterolateral), two median, and six dorsal pairs of setae; except for L5, those of the lateral series and D1, S1, and S2 slightly club-shaped and abruptly constricted at tips, L5 and the re-

maining setae of the dorsal shield slender and tapering from bases to tips; all setae smooth. The lengths of these setae follow: L1 29, L2 34, L3 29-36, L4 36-45, L5 18, L6 40, L7 26, L8 27, L9 52; D1 16, D2 16, D3 14, D4 18, D5 14, D6 8; M1 11, M2 46; S1 31, S2 29. L1-L3 about as long as distance to base of seta next behind. Peritremata coarse (about 7 wide), extending forward to about level of L1, the shield extending round behind coxa IV and forming a blunt hook. Sternal shield with three pairs of setae, the posteriormost pair set on small angular-shaped projections which in some specimens are cut off from the sternal shield, posterior margin of shield evenly, shallowly concave in middle two thirds and abruptly recessed at sides; genital shield 70 wide near base; ventrianal shield constricted behind posterior pair of preanals, 105-115 long, 65 wide near anterior margin and scarcely wider at level of anus, with two pairs of preanal setae and without pores; two pairs of metapodal shields, the primary 41 long, about 3.6 wide, the accessory 18 long, about 2 wide. A pair of setae between genital and ventrianal shields and four pairs of interscutal setae, including VL1 which is 29 long and shaped like L9, bordering ventrianal shield laterad. Fixed digit with *pilus dentilis* and four teeth (excluding terminal hook), the distal and proximal ones bidentate; movable digit with two minute teeth. Legs rather short but slender and without macrosetae; leg IV from base of coxa to end of claw 270 long; tarsus IV, excluding pretarsus, 72 long.

MALE: Dorsal shield 293-322 long (two specimens); resembles female in chaetotactic pattern, but D1, L7, L8, and VL1 tapering from bases to tips. Ventrianal shield with four to six (usually six) pairs of preanals and without pores. Spermatophoral process L-shaped with tip of foot bent away from body, shaft 19 long, foot 12 long. Primary and accessory metapodal shields coalesced.

LARVA: Idiosoma 181 long. Except for possibly L1, lateral setae and D4 of anterior dorsal shield with tips expanded; posterior dorsal shield with a single pair of setae, 56 long, rather coarse, and with tips expanded. Posteroventral setae 30 and 34 long and with tips expanded. Legs without macrosetae.

PROTONYMPH: Idiosoma 208 long, with an anterior and a posterior dorsal shield; anterior shield with four lateral, one median and four dorsal pairs of setae; posterior shield with three pairs of lateral setae and pairs M2 and D6, the posterior-most lateral seta 26 long; three pairs of setae in membrane between the two shields and three pairs of shieldlets, the anterior-most the largest; S1 and S2 present. Legs without macrosetae.

DEUTONYMPH: Idiosoma 302 long; resembles adult, with most of the lateral setae coarse, but tapering slightly from bases to tips. Seven pairs of setae, including VL1, surrounding anal shield, all but VL1 very short.

Holotype: Female, Miami, FLORIDA, September 20, 1958 (D. De Leon), from *Waltheria americana*. *Paratypes*: One male, four females, two nymphs, February 4, 1959, other data as for holotype. Specimens have also been taken from the same plant species in Everglades National Park and on Key Largo in March 1959. The mite occurs in numbers in among the flower heads which form dense clusters along the stem.

The holotypes of these two species are in the author's collection. Paratypes will be deposited in the University of Florida Collections, Gainesville.

Proprioseius meridionalis Chant 1957

P. meridionalis described from four adults collected from *Psychotria* at Homestead, Florida in 1949 is a common mite in Everglades National Park having been taken from *Guttarda scabra*, *Pluchea odorata*, and a malvaceous plant. It was also found in numbers on *Dryopteris* and on *Trema floridana* growing along the highway to the Keys about five miles south of Florida City. I have not collected it on the Keys, but to the north have taken it on *Callicarpa americana* at Coral Gables. The larva has a posterior pair of long whip-like setae, the protonymph an anterior and a posterior dorsal shield.

LITERATURE CITED

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